

Unit Planning Guide: Grade __4_ Unit __6_ of _8__

Unit Title: Measurement and Data	Pacing (Duration of Unit): 5 weeks
Grade: 4	Buffer Day(s):

Desired Results

Transfer Goals

Students will be able to independently use their learning to:

- **Make sense of problems and persevere in solving them.**
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- **Model with mathematics.**
- **Use appropriate tools strategically.**
- **Attend to precision.**
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Standards (Priority Standards in bold):

- **4.MD.1.** Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*
- **4.MD.2** Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
- **4.MD.3** Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting
Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.)

- **4.MD.4** Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

appropriate language function expectations and scaffolds or supports.

Meaning (*Mostly assessed through Performance Tasks/Assessments)

Big Ideas: (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)

- Measurement includes length (distance), time, volume, area and money.
- The smaller a unit of measure, the more accurate it is.
- Measurement describes the attributes of objects and events.
- Extend area and perimeter formulas to include missing dimensions

Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)

- How do I know what unit of measurement I should use?
- How does what I measure influence how I measure?
- How exact do I need to be when measuring?
- Why do we need standard units of measurements?

Acquisition (*Mostly assessed through traditional summative assessments)

Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

Students will know ...

- the relative sizes of measurement units within one system of measure.
- a smaller unit of measure will result in a more precise answer.
- information presented in line plots can be used to solve problems
- that $A = L \times W$ therefore $L = A/w$ and $W = A/L$

Key Academic Vocabulary:

- Convert
- Unit
- Area
- Perimeter
- Volume
- Scale
- Meter,
- Kilo-, centi-, mili-
- Pound, ounce, liter,
- Minute, hour, second
- Angle, ray, vertex, arc, intersect

Skills: The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)

Students will be skilled at:

- converting within a system of measurement. (understanding)
- recording measurement equivalents in a two-column table. (remembering)
- representing measurement quantities using diagrams such as number lines. (applying)
- applying the area and perimeter formula using real world math problems including missing dimensions. (applying)
- making a line plot to display a data set. (evaluating)